AMENDMENT TO THE CLAIMS:

The listing of claims will replace all prior versions and listings in the application.

Listing of Claims:

Claims 1-21 (Cancelled)

Claim 22 (New): A system for transmitting and receiving time division multiplexer (TDM) control data in a time division multiplexer (TDM) communication network, comprising:

a master control source for providing the TDM control data; and

at least one slave TDM multiplexer within the TDM communications network, the at least one slave TDM multiplexer being operative to produce a TDM signal comprising a plurality of fixed-length, recurrent time-slots in each frame that are allocated to respective channels associated with the TDM multiplexer, a given slave TDM multiplexor comprising:

a transmitter component for accepting the TDM control data from the master control source and inserting the TDM control data into at least a portion of one of the channels associated with the TDM signal such that the control data is transmitted in at least a portion of a recurring time slot in each frame;

a receiver component for extracting the TDM control data from the TDM signal and passing the TDM control data to a local processor; and

a bridging component for relaying TDM control data independently of a local control processor associated with the TDM multiplexer.

Claim 23 (New): The system of claim 22, the bridging component comprising a first First In, First Out (FIFO) buffer that buffers incoming TDM control data and a second FIFO buffer that buffers outgoing TDM control data such that TDM control data can be relayed across the slave TDM multiplexer without synchronization by the local control processor.

Claim 24 (New): The system of claim 22, the TDM control data comprising at least one of configuration data for one of the plurality of multiplexers and status information associated with the TDM communications network.

Claim 25 (New): The system of claim 22, further comprising a second communications network comprising a plurality of multiplexers, wherein a slave TDM multiplexer associated with the first communications network is operative to extract TDM data from a TDM signal provided by a preceding

slave TDM multiplexer associated with the first communications network, transmit the extracted control data to a successive slave TDM multiplexer associated with the first communications network as part of a TDM signal, and transmit the extracted control data to a multiplexer associated with the second communications network via a secondary communications link, as to create a subnetwork.

Claim 26 (New): The system of claim 25, wherein the secondary communications link comprises an RS-232 communications link.

Claim 27 (New): The system of claim 22, wherein the transmitter component inserts the TDM control data into a fraction of the fixed, recurring time slots, and the receiver component extracts the TDM control data from the corresponding fraction of the time slot.

Claim 28 (New): The system of claim 22, wherein the transmitter component inserts the TDM control data into at least two of the fixed, recurring time slots, and the receiver component extracts the TDM control data from the corresponding at least two time slots.

Claim 29 (New): A system for transmitting and receiving time division multiplexer (TDM) control data in a time division multiplexer (TDM) communication network, comprising:

a master control source for providing the TDM control data; and

at least one slave TDM multiplexer within the TDM communications network, communicating via a TDM signal, a given slave TDM multiplexor comprising:

a transmitter component for accepting the TDM control data from the master control source and inserting the TDM control data into the TDM signal;

a receiver component for extracting the TDM control data in the TDM signal and passing the TDM control data to a local processor; and

a bridging component for passing control data along to the next TDM multiplexer, the bridging component comprising at least one buffer that regulates the flow of data through the bridging component such that the control data can be relayed without synchronization by a local processor.

Claim 30 (New): The system of claim 29, the TDM control data comprising at least one of configuration data for one of the plurality of multiplexers and status information associated with the TDM communications network.

Claim 31 (New): The system of claim 29, wherein the slave TDM multiplexer is operative to produce a TDM signal comprising a plurality of fixed-length, recurrent time-slots in each frame that are allocated to respective channels associated with the TDM multiplexer, and the transmitter component inserts the TDM control data into at least a portion of one of the channels associated with the TDM signal such that the control data is transmitted in a recurring time slot in each frame.

Claim 32 (New): A system according to claim 29, wherein the receiver component is operative to perform a serial to parallel conversion of the TDM control data, bit shift the control data as to form at least one control data octet, and provide the at least one control data octet to a buffer.

Claim 33 (New): A system according to claim 29, wherein the transmitter component is operative to buffer control data octets from the master control source, perform a parallel to serial conversion of the control data, and insert the TDM control data into predetermined data positions within the TDM signal.

Claim 34 (New): The system of claim 22, wherein a first TDM multiplexer operates as a master station and each of the at least one slave TDM multiplexer transmit only when stimulated by the first TDM multiplexer, and only one slave TDM multiplexer transmits at a given time.

Claim 35 (New): The system of claim 22, the bridging component comprising a first First In, First Out (FIFO) buffer that buffers incoming TDM control data and a second FIFO buffer that buffers outgoing TDM control data such that TDM control data can be relayed across the slave TDM multiplexer without synchronization by a local control processor.

Claim 36 (New): A method for distributing time division multiplexer (TDM) control data within a time division multiplexing (TDM) communications network comprising a plurality of TDM multiplexers, comprising:

generating TDM control data, comprising at least one of configuration data for one of the plurality of multiplexers and status information associated with the TDM communications network, at a master control source;

receiving the TDM control data at a first TDM multiplexer;

inserting at least a portion of the received control data into a TDM signal at the first TDM multiplexer; and

extracting the TDM control data from the TDM signal at a second TDM multiplexer and providing the TDM control data to a TDM multiplexer control processor associated with the second TDM multiplexer.

Claim 37 (New): The method of claim 36, further comprising:

buffering the TDM control data at the second TDM multiplexer, wherein the TDM control data is received at a first data rate; and

transmitting to the TDM control data to a third TDM multiplexer at a second data rate that is different from the first data rate.

Claim 38 (New): The method of claim 36, wherein inserting at least a portion of the received control data into the TDM signal comprises inserting control data into one of a plurality of fixed-length, recurrent time-slots in a given frame of the TDM signal, such that the TDM control data is transmitted on a data channel associated with the TDM signal.

Claim 39 (New): The method of claim 36, further comprising:

transmitting the extracted control data to a third TDM multiplexer; and

relaying the transmitted control data to a fourth TDM multiplexer at the third TDM multiplexer independently of a local processor associated with the third multiplexer.

Claim 40 (New): The method of claim 36, further comprising transmitting the TDM control data received at the first TDM multiplexer to a third multiplexer associated with a second communications network.

Claim 41 (New): The method of claim 36, wherein receiving the TDM control data at a first TDM multiplexer comprises communicating with the master control source via an RS-485 protocol.